

REMARKS

Claim Status

Claims 21-30 and 32-41 are pending in this application. Claims 1-13 were previously cancelled and withdrawn claims 14-20 are canceled herein without prejudice to the applicant's right to file a divisional application directed thereto. Claim 31 is also cancelled. Claims 21-30 and 32-35 are presented as amended for the Examiner's review and reconsideration along with new claims 37-41 as added herein. No new matter is added. Support for the present amendments is found, *inter alia*, at paras. [0109-0115] and [0158-0167], as well as Figs. 6, 8A and 8B.

Rejection under 35 U.S.C. §102

Claims 21, 22 and 24-26 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Baskis (US 5,360,553). Applicants respectfully traverse this rejection in light of the claim amendments and for the following reasons.

The present invention, as recited in independent claim 21, is directed to an apparatus having four distinct components: a heater, a reactor, a first cooler for carbon solids, and a second cooler for vapor and gas, each serving its own separate function and working in cooperation with other components as claimed. The Baskis reference however is directed to an apparatus for thermal depolymerization having a heating unit 23 that houses container 28, which itself is the component that actually contacts and heats a coal-water emulsion (as opposed to the organic liquor of the present invention). Vapors from the container 28 are directed to a condenser column 19 and solids are removed to bin 32 by auger 31. With respect to Fig. 1 of Baskis, relied on by the Examiner for the anticipation rejection, this is all that is disclosed.

Applicants respectfully submit that this rejection cannot be maintained in light of the actual disclosure of Baskis. First, the Examiner asserts that Baskis discloses "a first cooler (31) for accepting the carbon solids." (O.A. ¶ 7). However, contrary to this assertion, Baskis only discloses that "the solids fall to the bottom of the container 28 where they are removed by, for example, an auger 31." (Col. 3, lns. 48-50). Nowhere in Baskis is any structure disclosed or suggested for cooling the carbon solids. In particular, auger 31, which the Examiner asserts to be a cooler without any support whatsoever, surrounded by burner 33 and is thus, if anything, a heated auger not a cooled auger. (See col. 3, lns. 48-50: solids at bottom of container 28 removed by auger 31; and lns. 54-55: "gas burner 33 mounted around the bottom of the container 28").

In addition to not disclosing a cooler for solids, the heater and reactor combination as claimed is neither disclosed nor suggested. The Examiner asserts that coil 24 is a heater. But the Baskis disclosure is clear that coil 24 is nothing more than a coil, which in and of itself can import no heat to the system. The only heat applied in the system relied on by the Examiner is supplied by burner 33, directly to container 28, which instead the Examiner asserts is the claimed reactor. There is one and only one heat source disclosed in Fig. 1 of Baskis. There is thus, at most, a heated reactor vessel with no separate heater upstream as claimed and no solids cooler as claimed.

The rejection of claim 21 as formulated therefore cannot stand because the reference when properly read – even if broadly – does not disclose every claim limitation recited. Even resort to Fig. 2 of Baskis cannot support the rejection because the system of Baskis Fig. 2 equally clearly does not describe a first cooler for the solid particles.

In addition to the reasons set forth above, Claim 22 is separately patentable over the cited reference. While Baskis does disclose an augered reactor in the system of FIG. 2, such is not disclosed or suggested in combination with the system of Fig. 1, which the Examiner relies on to reject claim 21. There is simply no disclosure of an augered reactor in combination with the other elements the Examiner relies on to reject the base claim. Disparate and mutually exclusive components from a reference cannot be simply assembled *ad hoc* as the Examiner has done.

The patentability of claim 24 was effectively addressed above in connection with claim 21. However, the separately stated grounds of rejection lays bare the complete lack of disclosure supporting the rejection. Col. 3, Ins. 45-52, cited by the Examiner simply does not mention, suggest or even hint at cooling. In fact, line 45 explicitly states that there is a “sharp increase in temperature.” If anything, this is a teaching away from the invention, not an anticipation of it.

For all of the above reasons, the rejection under §102 should be withdrawn.

Rejection under 35 U.S.C. §103

Claims 23 and 27-36 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Baskis (US 5,360,553). Applicants respectfully traverse this rejection in light of the claim amendments and for the following reasons. These rejections will be addressed in the order presented by the Examiner.

In addition to the reasons for patentability discussed above with respect to claim 21, the limitations of claim 23 further emphasize the differences over the prior art. In fact, the modification of the prior art proposed by the Examiner with respect to claim 23 is not understood. If claim 21 were anticipated as asserted by the Examiner, it is not clear why claim 23 would not also be. Instead, the explanation of how the Examiner proposes to meet the limitations of claim 23 under §103 only serves to emphasize that claim 21 is not anticipated in the first place. Nonetheless, claim 23 is amended herein to recite more clearly that the heater is a separate vessel from the reactor. Such is not suggested in the disclosure relied on by the Examiner, as the container 28 and coil 24 are both contained within the same enclosure 22 heated by a single burner 33.

Claim 29 is amended herein to clarify the limitation intended. There can now be no doubt that the invention recited by claim 29 requires the input of steam into the organic liquor feed stream entering the heater. Such is not disclosed or suggested in Baskis. The Examiner's citations to various heat exchanges disclosed by Baskis are thus inapposite.

Claim 30 is also amended herein to clarify the limitations. Contrary to the Examiner's assertion, the structure apparently relied on as the second cooler (third heat exchanger 182) does not include a particular separator 183. There is a typographical error in the Baskis disclosure wherein reference numeral 183 is used twice. The 183 that is used in conjunction with heat exchanger 182 is a coolant chamber. (See Col. 9, ln. 16). Regardless, no separator or filter of any sort is disclosed in Baskis in the specific location recited in amended claim 30, nor is there a return of separated particulate disclosed.

With respect to claim 32, once again the Examiner erroneously relies on auger 31 of Baskis as being a cooling device when it does not cool. For this reason alone claim 32 is patentable.

Claim 33 is amended herein to include limitations previously presented in claim 32. Regardless, with respect to the Examiner's comments, it is respectfully pointed out that heat exchanger 177 is not described or suggested as a condenser in Baskis as asserted by the Examiner. In fact, its use as a heat exchanger as described suggests just the opposite.

With respect to the rejections of claims 34-36, the Examiner appears to randomly select and combine components from the two mutually exclusive embodiments described in Baskis. Rather than the present invention being a mere rearrangement of parts as asserted by the Examiner, it is the

rejection that is based on a random rearrangement contrary to the Baskis disclosure. As there is no suggestion within the reference itself to make these modifications, the rejection cannot be sustained.

New claims 37 and 40 deserve separate mention. Both recite the apparatus as further comprising a water source that is used in conjunction with the solids cooler, thus providing a solids/water mixture for cooling. This element is either disclosed or suggested by the cited art.

In addition, new claims 38 and 39 recite in detail the features of the condenser of claim 32. These elements are shown in detail in Fig. 8B and are not shown or suggested as such in the cited reference.

Finally, new claim 41 recites an additional heater for activating the stored carbon particles as described in para. [0115] of the instant application. This element is also not suggested in the cited art.

In view of the foregoing, it is believed that all claims now pending in this Application are in condition for allowance. Should the Examiner have any continuing objections, the Applicant respectfully asks the Examiner to contact the undersigned at 415-442-1490 (direct line) in order to expedite allowance of the case. Authorization is granted to charge any outstanding fees due at this time for the continued prosecution of this matter to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (matter no. 061136-0014-US).

Respectfully submitted,

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